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ABSTRACT

The Governors of Massachusetts, Connecticut, and several other states have recently proposed employer tax credits as measures to fight high unemployment in their states. Such policies are also being considered at the federal level. The authors find that such policies, in fact, do little to increase aggregate demand, and instead only modestly reduce the after-tax cost of labor in an economy with high unemployment, falling wages, and weak demand They suggest a more effective approach to creating jobs in the states: increasing spending in labor-intensive sectors and programs that are matched by federal funds, such as Medicaid. These expenditures would be particularly effective if they were financed through temporary high-income tax increases.

INTRODUCTION

The Governors of Massachusetts, Connecticut, and several other states have recently proposed employer tax credits as measures to fight high unemployment in their states. Such policies are also being considered at the federal level.

These policies are not likely to have a substantial positive impact on employment generation, either at the federal or state level. The obstacles to success for such measures at the state level are particularly high. This is because balanced budget requirements and caps on the size of the credits effectively negate the potential of state-level employer tax credits to create any jobs, even if the credits are otherwise well-designed. For effectively fighting the recession and mass unemployment, the fact is that there is no substitute for effective countercyclical policies operating at the federal level. At the same time, states can generate a small number of additional jobs by increasing spending in labor intensive sectors and on programs that bring in federal matching funds, particularly if they are willing to use temporary taxes on affluent households to finance the spending.

THE TAX CREDIT PROPOSALS

The Great Recession of 2008-09 has had severe repercussions on the livelihoods of tens of millions of people throughout the United States. More than 8 million jobs have been lost since the nation fell into recession in December 2007. Official unemployment stands today at 9.7 percent (February 2010), and unemployment is expected to average 8.0 percent even in 2012, according the latest forecast by the Congressional Budget Office. While the Obama administration's $787 billion American Recovery and Reinvestment Act stimulus package has certainly helped, creating 2 million jobs since it was enacted in

early 2009, it was too small to address the full extent of the economic downturn. Further steps are needed if we want to avoid high unemployment for years to come.[1]

a. Federal policy

One of the notable recent policy ideas for generating job growth is the employer tax credit, proposed by Tim Bartik, John Bishop and the Economic Policy Institute (EPI). In October 2009 Bartik and Bishop proposed a two-year $190 billion Job Creation Tax Credit (JCTC), which would refund 15% of any payroll taxes incurred by added wage costs, whether due to new hires, increased hours, or increased wages.[2] According to Bartik and Bishop's analysis, the JCTC would create 35 new jobs for every $1 million in tax credit between 2010 and 2011, with the cost per job falling further if increased income tax payments and decreased public benefit receipt for newly employed workers are also taken into consideration.

In his February State of the Union Address, President Obama laid out a very similar proposal called the "Small Business Jobs and Wages Tax Cut" (JWTC). The JWTC would refund $5,000 plus the employer's share of Social Security taxes (6.2 percent of payroll under $106,000) for new hires at expanding firms in 2010.[3] Because the President's proposal was quite similar to the JCTC, economists at EPI concluded it would have roughly the same impact on jobs. The version of the credit that emerged from the House and Senate, however, provides only a credit of 6.2 percent of payroll costs for hiring long-term unemployed workers in 2010, whether the firms actually expand or not.[4] Because of these key differences, Bartik estimates this version of tax credit would create only 15 jobs per $1 million in tax credits.[5]

b. State policies

As the federal proposals have been working their way through the political process, several states have also introduced versions of these jobs tax credits. Governor Patrick of Massachusetts is proposing a $2,500 refundable tax credit for firms with fewer than 50 employees that hire full-time workers and keep them employed for at least one year between April 2010 and April 2012.[6] The value of the credit is capped at $50 million, and since it is refundable and based on withholding tax, the credit will still be available to firms that generate no profit.[7]

Governor Rell of Connecticut has made a somewhat similar proposal, an expansion of the "Jobs Creation Tax Credit Program (JCTCP)" in Connecticut.[8] The JCTCP expansion provides $2,500 for each full-time employee hired at firms with fewer than 25 employees. Because it is a non-refundable credit against state corporate income tax liabilities, it applies only to profitable firms. It applies to hires that occur between January 2010 and December 2012, and is available to the firm for two years beyond the year of the hire.[9] So, in practice the $10 million annual cap on the credit could cost the state up to $50 million.

THE ECONOMIC RATIONALE AND LIMITS OF THE PROPOSALS

The basic economic rationale behind these proposals is that they would reduce the cost to employers of hiring workers. If workers are less costly, employers will have greater incentive to employ them, and this could cause firms to do more hiring. Governor Patrick, for example, claims that "this will encourage the hiring of up to 20,000 people." This estimate, however, is simply built by dividing the cap on the credit ($50 million) by the size of the credit ($2,500) and does not reflect any serious attempt to discern the credit's impact.

In practice there is good reason to think the state-level credits will generate very little, if any, hiring of new employees. Even the federal credits, which have advantages over the state-level credits, are unlikely to generate as many jobs as are being projected. The state-level policies, with small credits, low caps and the accompanying balanced budget requirements, will certainly perform far worse.

POTENTIAL IMPACTS OF A FEDERAL CREDIT

a. The elasticity of labor demand

The amount of new employment generated by any federal tax credit is largely a function of the size of the credit and how responsive employers are to temporary reductions in total compensation. In the EPI proposal, Bartik and Bishop use a measure of firms' responsiveness –the 'own-price elasticity of demand for labor'– of 0.3; if compensation declines by 10 percent, firms will increase their demand for labor by 3 percent. This is the "best estimate" of the range of estimates of the long-run elasticity of the demand for labor based on Daniel Hamermesh's seminal work on labor demand.[10] In the short-run – more relevant in this situation, given the temporary nature of the credit – the elasticity will be lower, however. And in a period of particularly weak demand, employers will likely be even less responsive. Using an elasticity from the lower end of Hammermesh's range – 0.15 – the number of jobs per million dollars of credit falls from 35 to 18.

Estimating the JCTC job creation based on the lower (0.15) elasticity – 18 jobs per million dollars of credit – generates results much closer to those in the recent Congressional Budget Office analysis of similar employer tax credit proposals.[11] The CBO concludes that under any payroll tax cut proposal "most of the money forgone by the government would go to reduce employers' taxes for existing workers, so—per dollar of forgone revenues—the added incentive to increase employment and hours worked would be small." If the payroll tax cut were restricted to firms that were expanding payrolls, the CBO estimates that the policy would create between 8 and 18 full-time jobs per million dollars of credit.

b. Analogous and historical policy comparisons

It is unclear in the current economic environment how responsive firms would actually be to these sorts of tax credits. With demand for goods and services seriously depressed, unemployment high and wages falling, it is not obvious that a tax credit for hiring would actually cause firms to expand their employment and operations. Much of the interest in this type of tax credit, however, is based on the perceived success of the 1977-78 New Jobs Tax Credit (NJTC). Studies by Bishop (1981)and Perloff and Wachter (1979), as well as surveys of small businesses (McEvitt, 1978) do provide some evidence that firms added jobs as a result of the credit.[12]

Yet there is also evidence suggesting caution in interpreting these findings. The new jobs identified by these studies were based on the differences in employment gains between firms that knew about the NJTC and those that did not. Firms that knew about the credit seemed to grow 3 percent faster than those that did not (Perloff and Wachter, 1979). But these studies are unable to rule out the possibility that firms knew about the credit *because they were already planning to hire new workers.*

Based on an extensive employer survey combined with the payroll records of Wisconsin firms, Tannenwald (1982) found that most firms with knowledge of the NJTC did not increase hiring, and that the implied own-price elasticity of the demand for labor in response to the policy was just 0.04.[13] Firms did not hire because demand for their product simply did not warrant increased production. Tannenwald also found that there were also important organizational and informational gaps. At many firms the people

doing the hiring had little interaction with the people filing taxes, and the timeframe for hiring is often very different than the timeframe for filing taxes.

Such weak employment impacts are consistent with observation of other policy interventions that affect labor costs, in particular raising the minimum wage by modest amounts. The "consensus" view of labor economists is that the demand for teenage labor falls one percent in response to an increase in the minimum of 10 percent (an elasticity of 0.1), and many studies find the relationship is indistinguishable from zero.[14]

c. Federal policies and deficit financing

Federal policies that would reduce the payroll taxes of firms have the potential to increase net employment during a recession largely because the federal government can engage in deficit spending. In the absence of this ability, gross job gains from the credit would be weighed against gross job losses from the offsetting budget cuts or tax increases, resulting in a net change in employment much smaller than reported by EPI or the CBO, likely very close to zero. Whether that net increase is positive or negative would depend on the responsiveness of the sectors benefiting from the tax credit and the labor intensity of the sectors experiencing budget cuts.

LIMITATIONS OF STATE-LEVEL CREDITS

State-level impacts from similar policies are likely to be smaller than even the most limited expectations at the national level. In their federal proposal, Bartik and Bishop note that state-level versions of these tax credits will have little impact on jobs because they are likely to be poorly designed, and any employment impacts will be undermined by state budget rules. For a new jobs tax credit to be effective, Bishop warns that 1) it needs to be a significant share of labor costs; 2) it should not favor low-wage, high-turnover firms, and; 3) there should not be a firm-level cap on the amount of credit that can be received.[15] By these criteria, "poor design" is a factor in both Massachusetts' and Connecticut's proposals, which have small credits, are restricted to small (high-turnover) firms, and have low caps on total amount of the credit. And all states face balanced budget requirements which will force budget cuts or other tax increases to offset the revenue lost through the credit.

WASTED EFFORT – REWARDING ALREADY PLANNED EXPANSION

Even supporters of the federal credits acknowledge that many firms that were already planning on expanding would benefit from the credit. According to EPI's own analysis, under the best-case scenario, for every job created because of the EPI-proposed tax credit in 2010 and 2011, more than six other jobs that were already going to be created would also benefit from the credit. This is arguably acceptable at the federal level because these benefiting firms may in turn increase their demand for additional workers or other materials and equipment.[16] Moreover since the federal credit does not have a cap, the fact that these already-expanding firms take the credit does not exclude other firms from expanding *because* of the credit. This is not the case with the state-level credits. By capping the value of the credit, it is possible that the full amount budgeted for the credit could be consumed by firms that were already going to expand.

The credits would be available to any small firm adding net new full-time jobs in Massachusetts between April 2010 and April 2012 and any small firm hiring workers in Connecticut between January 2010 and December 2012. There is no way for the states to distinguish between jobs added because of the credit

and those that would have been added anyway. This is a major problem for the state-level credits, since even in a deep recession many firms expand employment and even more engage in replacement hiring.

The existing volume of hiring and expansion among small firms suggests that much, if not all, of the credit could be absorbed by hiring that was already going to happen. Because the state credits are capped, only 20,000 Massachusetts jobs and 4,000 Connecticut jobs can claim the credit in a single year. The available data do not allow us to precisely compare recent hiring to the categories laid out in the Connecticut and Massachusetts proposals, particularly the requirements for employment tenure and that the jobs must be full-time. However, since eighty percent of all jobs are full-time and the job tenure of the typical worker is four years, it remains quite possible, given the following data, to conclude that the current level of hiring among small firms in Massachusetts and Connecticut will be sufficient to fully absorb the proposed employer tax credits.

In the second quarter of 2009, Massachusetts added approximately 47,000 jobs at expanding firms with fewer than 50 employees and 19,000 jobs at newly created firms with fewer than 50 employees.[17] In Connecticut 16,000 jobs were added at expanding firms with fewer than 20 employees and 6,900 jobs were added at newly created firms with fewer than 20 employees.[18]

Because of employment turnover and business closings, we cannot simply multiply quarterly gross job gains figures by four to obtain annual estimates. Workers who are hired might later quit or be fired, and firms that expand in one quarter might contract in the next. In general, however, for expanding firms of all sizes, the level of gross job gains in a given quarter is usually two-thirds of the level of gross job gains across an entire year (Table 1). For newly opened firms, the quarterly gross job gains are roughly one-third of job gains over an entire year.

The volume of hiring – relevant here because the Connecticut credit is based on the number of full-time hires, not firm expansion – is even greater. Between December 2007 and December 2009 (the most recent data) an average of 52,000 workers were hired each month in Connecticut, and in Massachusetts monthly hiring averaged 98,000 workers (Figure 1).[19] In spite of all of this hiring, total employment declined steeply over this period because this is less hiring than takes place in an expansion, and because layoffs rose.[20]

Despite the approximations required by the data, a fairly conservative set of assumptions suggest that the existing volume of hiring and expansions at small firms is sufficiently large to absorb the entire of amount of the credits being proposed in Massachusetts and Connecticut. If 1) small firm expansion in 2010 and 2010 remained as low as levels in 2009, 2) quarterly gross jobs gains were 80 percent of annual gains at expanding firms and 65 percent at opening firms, and 3) only half of workers at small firms work 35 hours or more per week, there would already be 44,000 jobs eligible for the credit in Massachusetts each year and 15,000 in Connecticut, even without the credit. This is more than enough to absorb all of the budgeted credits in both states. Since the credits are available first-come-first-serve and even more gross job creation is expected in 2010 and 2011, there may be no credit available for firms who might actually expand *because* of the credits' existence. Knowing this might serve as a major obstacle for firms contemplating creating jobs based on the expected benefit of the credit.

FURTHER LIMITATIONS OF SMALL CREDITS AND THE FOCUS ON SMALL FIRMS

Facing depressed demand and considerable economic uncertainty, employers are likely to require relatively generous subsidies before expanding payrolls. To the extent that the NJTC of the late 1970s was

successful, it was because the $2,100 credit was equal to 22 percent of a typical full-time worker's annual earnings.[21] An equivalent credit in 2009 would be worth nearly $12,000. Today, in Bishop's estimation, a tax credit needs to be "larger than $3,000 to grab the attention of employers," and ideally it would be more than twice that amount. At $2,500, the credits offered by Massachusetts and Connecticut are most likely to be insufficient to grab the attention of employers.

The CBO also notes that restricting the credit to benefit only small firms will further reduce the impact on jobs, because employment at small firms is especially volatile. Given their higher-than-average volume of hiring and turnover, directing the credit at small firms would exacerbate the tendency of the program to reward job creation that would have occurred anyway. The CBO found that limiting the credit to firms with fewer than 100 employees would result in five to ten percent less job growth per dollar spent on a federal credit than opening it to all firms.[22] If states restrict their credits to even smaller firms (50 employees in Massachusetts and 25 in Connecticut), the job impacts will be even smaller.

REMAINING POTENTIAL FOR GAMING THE CREDITS

Since the proposed credits in Massachusetts and Connecticut would be available to firms of any organizational form and do not reward transferring employees between sites or related businesses of a corporation, they circumvent some of the more obvious ways a firm might "game" the system. Despite these safeguards, the Massachusetts proposal does leave open one unintended consequence. Because the baseline for measuring employment growth is March 31st 2010, it would be possible for firms to lay off workers in advance of the March 31st cutoff and re-hire them in April. Given the costs of making this adjustment in terms of worker morale and lost output and the relatively small size of the credit, it is unlikely that firms would actually try to game the system in this way. But this only underscores the fact that the small size of the credit makes it unlikely that employers are likely to actually create jobs because of the credit.

The proposal in Connecticut contains a similar loophole, giving firms the incentive for very short-term hiring. To be eligible for the credit, hires must be employed during, but cannot have been hired in, the last month of the year. So, firms that hire a worker in November 2010 and fire them in January 2011 will be eligible for the full $2,500 tax credit.

THE REALITY OF BALANCED BUDGETS

Massachusetts and Connecticut, along with all states except for Vermont, have balanced budget requirements. Therefore any expenditures on these tax credits will need to be offset by budget cuts or other tax increases, effectively undermining any stimulative effect of the credit. In fact, the loss in employment (both public and private sector) from budget cuts used to finance the employer tax credits would almost certainly be greater than the number of jobs added due to the tax credits. Each million dollars of across-the-board reductions in state government spending would eliminate more than 18 jobs in each state; $50 million in reduced spending would eliminate 938 jobs in Massachusetts, and $10 million in reduced spending would eliminate 185 in Connecticut (see Table 2).[23] These job losses would impact state employees laid off due to the cuts, private sector employees at firms losing contracts with the state, and other private sector workers at companies where business drops off due to reduced customer spending. These combined job losses offset the job gains estimated by most of the analyses of even the federal employer tax credits.

THE TIMING OF THE CREDITS

Because of the timing of the proposed credits, the current state budgets will not be affected by their adoption. In Massachusetts no credits will be paid until April 2012, even for hires that are made as early as April 2010. In Connecticut, the non-refundable credits can be used in the following tax year. The intent of this design is to give firms an incentive to hire now, when the economy is bad, while allowing state governments to defer the costs for another budget cycle. One of the problems with this approach is that state budgets are expected to face serious shortfalls for several years. The costs incurred by these employer tax credits will lead to real budget cuts and job losses in two or three years. A second problem with delaying the credits is that having to wait so long – up to two years in Massachusetts – to receive the credit makes it much less attractive to small firms that are struggling with cash flow in the current economic environment.

THERE IS ONLY ONE FEDERAL GOVERNMENT, BUT STATES DO HAVE BETTER OPTIONS THAN EMPLOYER TAX CREDITS

Given the small size of the credit, the existing volume of hiring and expansion at small firms, and the fact the states will have to cut spending in other areas, we cannot expect these credits to create jobs. Given the failure of the U.S. Senate to implement an effective second round of economic stimulus, states may despair of any productive policy solutions. But while there are no substitutes for federal action, there are more productive routes than these employer tax credits.

a. Education spending

By shifting existing spending to more labor-intensive areas or toward programs that draw in matching federal dollars, states can create new jobs. Education generally and early childhood education in particular are two labor-intensive sectors where state spending could generate additional job growth. In Massachusetts, 27 jobs are created per million dollars of education spending; in Connecticut, the same funding creates 25.5 jobs. Early childhood education spending is even more effective, creating 30 and 33 jobs per million dollars in spending, respectively. Shifting $50 million of the general state budget into education (including K-12, vocational, and higher education) would generate 413 additional jobs in Massachusetts; a comparable shift of $10 million in Connecticut would create 70 jobs (Table 1). Shifting spending toward early childhood education alone (including daycare centers, Headstart, and preschool) would create 560 jobs in Massachusetts and 148 in Connecticut.

b. Healthcare spending

While healthcare is not as labor intensive as education or early childhood education – as shown by the jobs per million dollars figures in Table 2 – healthcare spending by state governments does bring in additional federal dollars to the state. State Medicaid spending has a nearly 62 percent matching rate for 2010 in both Massachusetts and Connecticut; the federal government finances 62 cents of every dollar of Medicaid spending undertaken by the state. Thus a $50 million increase in spending by the state leverages $82 million in additional federal dollars, for a combined $132 million. As a result, $50 million in increased Medicaid spending by Massachusetts would create 1,414 jobs, and $10 million in spending would create 271 jobs in Connecticut.

c. Infrastructure spending

Because it is relatively capital intensive, spending on infrastructure projects will not create as many jobs as spending in these other sectors, at least in the short run. In the absence of matching funds, shifting existing spending toward infrastructure projects would actually result in a decline in jobs in Massachusetts and Connecticut. The inherent value of infrastructure projects in a recession is that they enhance the long-term productivity of the state's economy, and do so utilizing the labor and equipment of sectors that are disproportionately impacted in downturn. However, infrastructure projects frequent generate federal or private matching funds. If infrastructure investments were accompanied by significant matching funds (close to 40 percent of total costs), they would then generate additional employment beyond the existing pattern of state government spending.

d. Financing state spending

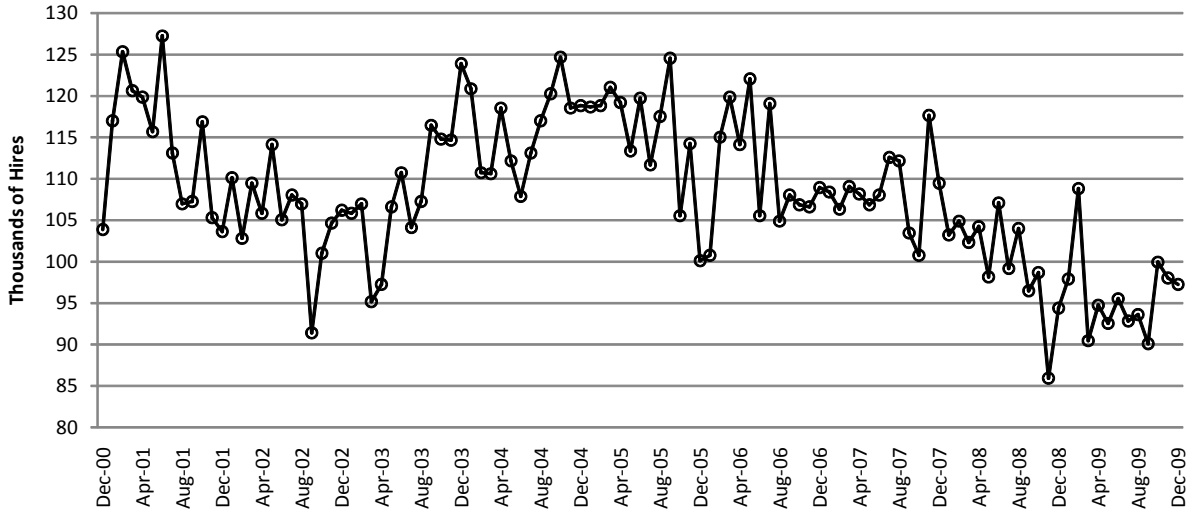
If states financed this additional spending by raising taxes on affluent households instead of simply shifting spending out of other areas, they could create a somewhat greater number of new jobs. Since low-income households generally spend nearly every dollar they earn, additional taxes on those households reduce consumer spending dollar for dollar. Affluent households, however, save considerable portions of their incomes; temporary tax increases on those households would reduce spending somewhat, but much less than dollar for dollar.[24] Conservative estimates from research on consumer responses to changes in income and social security taxes suggest that affluent households might reduce their consumption by up to half of the amount of a temporary tax increase.[25]

If additional spending on education and healthcare is financed by temporary taxes on high-income households (with incomes above $150,000), the impact on job creation will be somewhat greater than if the spending is based on simply shifts the existing budget. Financed in this way, spending $50 million in Massachusetts would generate 2,096 jobs in the health care sector, 1,096 jobs in education, 1,243 jobs in early childhood education, or 347 jobs in infrastructure. Spending $10 million in Connecticut would produce 409 jobs in the health care sector, 208 jobs in education, 286 jobs in early childhood education, or 69 jobs in infrastructure.

CONCLUSION

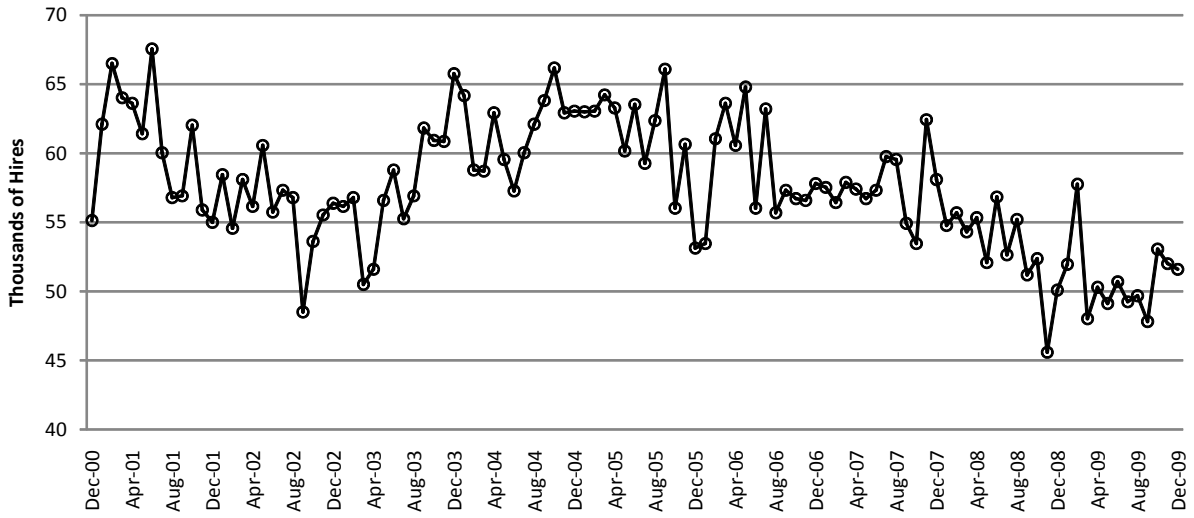
Since they do little to increase aggregate demand, and instead only modestly reduce the after-tax cost of labor in an economy with high unemployment, falling wages, and weak demand, even the federal employer tax credit proposals should not be expected to dramatically increase employment. Because the state proposals are small, targeted to small firms, and capped at relatively low levels they can be expected to generate little, if any, gross job gains. The credits are not generous enough to motivate firms that weren't already planning on hiring to do so, and will possibly be entirely consumed by the existing volume of hiring and expansion at small firms. Since the state credits have to be financed under a balanced budget, they cannot be expected to cause net increases in employment. The job losses resulting from decreased state spending will almost certainly outstrip the number of jobs created by the credits. A more effective approach to creating jobs in the states would be to increase spending in labor-intensive sectors and programs that are matched by federal funds, such as Medicaid. These expenditures would be particularly effective if they were financed through temporary high-income tax increases.

Figure 1a. Hiring in Massachusetts



Source: PERI analysis of BLS JOLTS data.

Figure 1b. Hiring in Connecticut



Source: PERI analysis of BLS JOLTS data.

Table 1. Quarterly and Annual Gross Job Gains in Massachusetts and Connecticut, All Firm Sizes

	Annual Gross Job Gains (Over the 12-month period ending in the 1st Quarter)				Quarterly Job Gains (In the First Quarter)				Quarterly gains as Share of Annual Gains			
	Connecticut		Massachusetts		Connecticut		Massachusetts		Connecticut		Massachusetts	
	At Expanding firms	At Opening Firms	At Expanding firms	At Opening Firms	At Expanding firms	At Opening Firms	At Expanding firms	At Opening Firms	At Expanding firms	At Opening Firms	At Expanding firms	At Opening Firms
1994	113,354	52,286	207,478	102,411	69,093	16,678	128,569	32,437	61%	32%	62%	32%
1995	117,374	55,992	227,401	105,661	75,412	15,961	148,509	40,770	64%	29%	65%	39%
1996	109,188	57,761	223,640	104,134	78,283	18,392	144,227	38,393	72%	32%	64%	37%
1997	133,943	65,751	235,949	116,948	91,277	16,379	157,014	37,448	68%	25%	67%	32%
1998	128,349	56,298	244,150	109,312	85,935	17,043	153,543	42,538	67%	30%	63%	39%
1999	129,906	55,916	240,505	119,361	86,965	16,977	159,660	41,991	67%	30%	66%	35%
2000	126,870	52,941	265,811	118,219	87,458	19,850	177,441	38,156	69%	37%	67%	32%
2001	119,213	45,676	274,926	109,342	75,804	16,521	171,513	37,450	64%	36%	62%	34%
2002	105,199	47,188	209,823	90,028	72,563	12,774	149,238	40,685	69%	27%	71%	45%
2003	88,351	39,260	187,661	88,921	61,779	11,814	132,152	37,932	70%	30%	70%	43%
2004	100,883	37,022	192,228	73,375	69,043	14,575	137,588	31,286	68%	39%	72%	43%
2005	101,986	39,920	189,690	80,933	66,652	16,714	127,609	35,113	65%	42%	67%	43%
2006	102,740	36,810	206,581	74,240	69,088	11,035	131,672	28,234	67%	30%	64%	38%
2007	102,231	36,501	201,199	73,782	65,705	12,178	129,828	30,551	64%	33%	65%	41%
2008	104,292	33,749	196,149	74,193	68,268	9,096	129,180	30,751	65%	27%	66%	41%
2009	77,656	28,989	151,141	57,709	53,746	8,609	98,552	22,806	69%	30%	65%	40%

Source: PERI analysis of BLS Business Employment Dynamics data.

Table 2. State Spending Multipliers: Alternatives to the Payroll Tax Rebate

Massachusetts ($50 million credit)							Net Employment Effects - Massachusetts			
	Funding level ($million)	**Total jobs, funding level**	Total jobs per $1 million	Direct jobs per $1 million	Indirect jobs per $1 million	Induced jobs per $1 million	Net Jobs, shift in state spending	Net Jobs, increased taxes on upper income brackets	State Spending and Investment (total jobs per $1 million)	Personal Consumption (Households $150k+), jobs per $1 million*
Healthcare	130	**2,352**	18.06	11	1.9	5.16	1,414	2,096	18.76	10.22
Education	50	**1,351**	27.02	17.2	2.1	7.72	413	1,096	18.76	10.22
ChildCare	50	**1,498**	29.96	19.4	2	8.56	560	1,243	18.76	10.22
SL investment	50	**602**	12.04	6.7	1.9	3.44	-336	347	18.76	10.22

Connecticut ($10 million credit)							Net Employment Effects - Connecticut			
	Funding level ($million)	**Total jobs, funding level**	Total jobs per $1 million	Direct jobs per $1 million	Indirect jobs per $1 million	Induced jobs per $1 million	Net Jobs, shift in state spending	Net Jobs, increased taxes on upper income brackets	State Spending and Investment (total jobs per $1 million)	Personal Consumption (Households $150k+), jobs per $1 million*
Healthcare	26	**456**	17.5	10.7	1.8	5	271	409	18.48	9.38
Education	10	**255**	25.48	16.2	2	7.28	70	208	18.48	9.38
ChildCare	10	**333**	33.32	21.9	1.9	9.52	148	286	18.48	9.38
SL investment	10	**116**	11.62	6.6	1.7	3.32	-69	69	18.48	9.38

Source: PERI and IMPLAN 2007

Notes:

Healthcare includes matching funds from fed govt at rate of 0.616 fed dollars for each state dollar

Education includes primary, secondary, college/university, and other (such as trade schools)

ChildCare includes daycare centers, home care, headstart, pre-school, and other modes of child care

State and Local investment includes infrastructure spending on buildings, roads, computer equipment, etc.

*For households >$150k, fall in personal consumption is 50% total tax increase. This assumes symmetry between tax rebate and tax increase consumption effects.

[1] See the assessments of ARRA by the Council of Economic Advisers and the Congressional Budget Office. Available at: http://www.whitehouse.gov/sites/default/files/microsites/100113-economic-impact-arra-second-quarterly-report.pdf and http://www.cbo.gov/ftpdocs/110xx/doc11044/02-23-ARRA.pdf.

[2] See Bartik, Tim and John Bishop, "The Job Creation Tax Credit," Economic Policy Institute, October 20, 2009: http://www.epi.org/publications/entry/bp248/.

[3] See Bivens, Josh, "Jobs and Wages Tax Cut Should be Part of a New Jobs Package", February 4, 2010: http://www.epi.org/publications/entry/pm158/.

[4] Both bills also include an additional $1,000 credit for employers' income taxes if the jobs are year-round and last for at least one year.

[5] Bartik, Tim, "Not All Job Creation Credits are Created Equal," EPI, February 12, 2010. http://www.epi.org/analysis_and_opinion/entry/not_all_job_creation_tax_credits_are_created_equal/

[6] The Massachusetts credit requires the net increase in employment at the firm must be maintained for a year, not that the individual worker must remain with the firm for one year.

[7] Governor Patrick's proposal is available at: http://www.mass.gov/Agov3/docs/Legislation/02102010%20Job%20Creation%20Bill.pdf.

[8] Governor Rell's proposed tax credit is describe at: http://www.ct.gov/governorrell/cwp/view.asp?A=3872&Q=455212.

[9] Hire eligible for the Connecticut credit must be employed in, but cannot have been hired during December. In the second and third years of the credit expansion (2011 and 2012), hires made during the last six months of the year are only eligible for a credit of $1,250.

[10] Hamermesh, Daniel, 1993. *Labor Demand*. Princeton University Press, Princeton, New Jersey.

[11] CBO, "Policies for Increasing Economic Growth and Employment in 2010 and 2011," January 2010.

[12] Bishop, John, 1981. "Employment in Construction and Distribution Industries: The Impact of the New Jobs Tax Credit," in Sherwin Rosen, ed., *Studies in Labor Markets* (Cambridge, Mass.: National Bureau of Economic Research, 1981), pp. 209–246. Perloff, Jeffrey and Michael Wachter, 1979. "The New Jobs Tax Credit: An Evaluation of the 1977-78 Wage Subsidy Program," American Economic Review (May): 173-79, and McKevitt, James, 1978. Jobs Tax Credit. Testimony at Joint Hearings before the Subcommittee on

Administration of the Internal Revenue Code and Senate Select Small Business committee, 95th

Congress 2nd session (Government Printing Office, 1978) 179-196.

[13] Tannenwald, Robert, 1982. "Are Wage and Training Subsidies Cost-Effective? – Some Evidence from the New Jobs Tax Credit," *New England Economic Review*, September/October 1982, 25-34.

[14] The "consensus" view here is reflected in the survey of labor and public economists conducted by Fuchs, Krueger, and Poterba (Fuchs, Victor, Alan Krueger, and James Poterba, 1998. "Economists' View about Parameters, Values and Policies: Survey Results in Labor and Public Economics, *Journal of Economic Literature* Vol. 36, 1387-1425. Also see the classic work by David Card and Alan Krueger (*Myth and Measurement: The New Economics of the Minimum Wage*, 1995) as well as more recent studies by Dube et al and Doucouliagos and Stanley (Doucouliagos, Hristos, and T. D. Stanley. 2009. "Publication Selection Bias in Minimum-Wage Research? A Meta-Regression Analysis." *British Journal of Industrial Relations* 47 (2): 406-28; Dube, Andrajit, T. William Lester, and Michael Reich. 2007. "Minimum Wage Effects Across State Borders: Estimates Using Contiguous Counties." *Institute for Research on Labor and Employment Working Paper Series* No. iirwps-157-07.

[15] Bishop, John, 2008. "Can a Tax Credit for Employment Growth in 2009 and 2010 Restore Animal Spirits and Help Jump Start the Economy?" Cornell University IRL Discussion Paper.

[16] Bivens, Josh, 2010. "Jobs and Wages Tax Cut Should be Part of a New Jobs Package," Economic Policy Institute, Policy Memorandum #158, February 4, 2010.

[17] The BLS Business Employment Dynamics (BED) data are available by firm size at the federal level, but only for all firms sizes combined at the state level. These small firm job creation estimates are based on the assumption that the distribution of gross job creation among small firms mirrors that of expanding firms of all sizes.

[18] While the Connecticut credit is available to firms with 25 or fewer employees, the closest size class in the BLS data is for firms with 20 or fewer employees.

[19] These figures are based on analysis of the BLS JOLTS data, which are not available at the state level, only regionally. The Massachusetts figure assigns 13 percent of Northeast hires to Massachusetts, based on the state's state of total employment in the Northeast between 1998 and 2008.

[20] The state of Massachusetts' own Job Vacancy Survey shows that there was an average of 50,000 active job openings during the 2nd quarter of 2009. http://lmi2.detma.org/Lmi/pdf/JobVac2009Q2.pdf

[21] Bishop, 2008.

[22] CBO, February 3, 2010

[23] The estimates of employment gains and losses due to changes in state government policy changes in Massachusetts and Connecticut, reported in Table 1, are derived from an input-output model. The input-output model allows us to observe relationships between different industries in the production of goods and services. We can also observe relationships between consumers of goods and services, including households and governments, and the various producing industries. For our purposes specifically, the input-output modeling approach enables us to estimate the effects on employment resulting from an increase in government expenditures for the products or services of a given industry. For example, we can estimate the number of jobs directly created in the education industry for each $1 million of spending on education. We can also estimate the jobs that are indirectly created in other industries through the $1 million in spending on education—industries such as textbook publishing and school building construction. Overall, the input-output model allows us to estimate the economy-wide employment results from a given level of spending. For this report, we used the IMPLAN 2.0 software and IMPLAN 2007 state-level data. This data provides 440-industry level detail and is based on the Bureau of Economic Analysis (BEA) input-output tables.

[24] According to the most recent data from the Survey of Consumer Finances, just 34 percent of low-income households (bottom fifth of the income distribution) had any savings in 2007, while 85 percent of high-income households (top ten percent of the income distribution) had savings. The typical (median) net worth (assets less debts) was $8,100 among low-income households, while it was more than $1.1 million for those with high incomes. Data from the Consumer Expenditure Survey (2008) show that low-income households actually spend more than they make (after-tax income), while high-income households spend just 64 percent of their income on average. For more detail on savings of affluent households and the relative benefits of temporary progressive taxes during a downturn, see Carroll, Christopher, 1998. "Why Do the Rich Save So Much," NBER Working Paper #6549; Dynan, Karen, Jonathan Skinner, and Stephen Zeldes, 2000. "Do the Rich Save More?" NBER Working Paper #7906; Orszag, Peter and Joseph Stiglitz, 2001. "Budget Cuts Vs. Tax Increases at the State Level: Is one more counter-productive than the other During a Recession?" Center on Budget and Policy Priorities, November 6, 2001.

[25] A number of studies have found that consumption does respond to tax changes, and that the response is smaller among higher-income households. Johnson et al (2006) find that high-income households spent roughly half of their 2001 income tax rebate on nondurable goods, while Parker (1999) showed that when the earnings of high-income households rose beyond the social security payroll tax cap, spending increased by one half of the predictable increase in after-tax income. (Johnson, David, Jonathan Parker, and Nicholas Souleles, 2006. "Household Expenditure and the Income Tax Rebates of 2001," *American Economic Review*, Vol. 96(5), 1589-1610; Parker, Jonathan, "The Reaction of Household Consumption to Predictable Changes in Social Security Taxes." *American Economic Review*, Vol. 89(4), 959-73.) For several reasons, we consider the 50 percent reduction in spending by high-income households under a temporary tax increase to be fairly conservative. For one thing, households at the $69,000 considered by Johnson et al (2006) and at the Social Security cap considered by Parker (1999) are much closer to middle-income than high-income. These households will find it harder to maintain their desired level of consumption than households with incomes above $150,000 that we are considering here. In addition, the evidence in Johnson et al (2006) and Parker (1999) is based on consumer responses to a tax rebate. For affluent households, spending out of tax rebates will arguably be greater than reductions in spending out of temporary tax increases. This will be the case if the rebate is viewed as a one-off source of found money that can be spent on an extravagance, while the household is loathe to reduce its standard of living in response to a temporary tax increase.